

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number  
**WO 2004/007529 A3**

(51) International Patent Classification<sup>7</sup>: **A61K 31/00**

(74) Agents: CALDWELL, John, W. et al.; Woodcock Washburn LLP, 46th Floor, One Liberty Place, Philadelphia PA 19103 (US).

(21) International Application Number:  
PCT/US2003/022071

(22) International Filing Date: 15 July 2003 (15.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/395,918 15 July 2002 (15.07.2002) US

(71) Applicant (for all designated States except US): **THE TRUSTEES OF PRINCETON UNIVERSITY** [US/US]; P.O. Box 36, 5 South Building, Princeton, NJ 08544 (US).

(81) Designated States (national): AE, AG, AI., AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **McLENDON, George** [US/US]; 511 Cherry Hill Road, Princeton, NJ 08540 (US). **KIPP, Rachel, A.** [US/US]; 16-08 Quail Ridge Drive, Plainsboro, NJ 08536 (US). **CASE, Martin** [US/US]; 82 Valley Road, Princeton, NJ 08544 (US). **SHI, Yigong** [US/US]; 18 Coburn Road, Pennington, NJ 08534 (US). **SEMME LHACK, Martin, F.** [US/US]; Department of Chemistry, Princeton University, 5 South Building, Princeton, NJ 08544 (US). **ALBINIAK, Philip, A.** [US/US]; Department of Chemistry, Princeton University, 5 South Building, Princeton, NJ 08544 (US). **WIST, Aislyn, D.** [US/US]; Department of Chemistry, Princeton University, 5 South Building, Princeton, NJ 08544 (US).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
16 February 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: IAP BINDING COMPOUNDS

(57) Abstract: Compounds that bind cellular IAPs (inhibitor of apoptosis proteins) are disclosed. The compounds are mimetics of the N-terminal tetrapeptide of IAP-binding proteins, such as Smac/DIABOLO, Hid, Grim and Reaper, which interact with a specific surface groove of IAP. Also disclosed are methods of using these compounds for therapeutic, diagnostic and assay purposes.

WO 2004/007529 A3

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/22071

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 31/00

US CL : 514/1

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
USpat structure search

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 93/23424 A1 (HAUPT et al.) 25 November 1993 (25.11.1993), claim 1.	1-47
X	US 5,378,803 A (MORGAN et al.) 03 January 1995 (03.01.1995), claim 1.	1-47
X	US 5,463,124 A (JACOBI et al.) 31 October 1995 (31.10.1995), claim 1.	1-47

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

10 November 2005 (10.11.2005)

Date of mailing of the international search report

08 DEC 2009

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner of Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

Karen A. Canella

Telephone No. (571) 272-1600